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Centrale overheid en regionale welvaart

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SUMMARY: CENTRAL GOVERNMENT AND REGIONAL WELFARE

In regional economics the impact of regional policies on the spatial distribution welfare is a well studied subject. The impact of central government policies, like social security and tax programmes, however, is often neglected. In The Netherlands regional policy absorbs only 3 percent of the total budget of the central government. Spatial impacts of the remaining 97 percent of the budget will - most probably - be much larger. One cannot draw conclusions as to the effectiveness of regional policy, when effects of the largest part of the budget are unclear. The aim of this study is to investigate the impact of the fiscal flows of the Dutch central government and Dutch social security funds (ESA S61 and S63) on interprovincial differences in welfare.

In most regional fiscal incidence studies the effect of fiscal policy on regional *income* differences is studied. Citizens receive benefits from the central government in the form of subsidies or public goods, and they pay taxes and social security contributions. The question then is: Does a region receive more than it pays? These net fiscal incidence studies can be divided in tax incidence and expenditure incidence studies. Expenditure incidence studies can be further divided into 'source of income' studies and 'use of income' studies (Greene, 1974). The first group of studies is interested in the regional distribution of inputs used to produce the publicly provided goods. Salaries and investments e.g., generate primary income in the receiving regions. Benefit studies are interested in the regional distribution of benefits from the use of publicly provided goods and services.

These fiscal incidence studies have the following drawbacks. First, different types of fiscal flows have a different impact on income or welfare. The effect of investment programmes is not comparable to the impact of social security benefits. This aspect is often neglected in net fiscal flow studies. Second, 'source of income' and 'use of income' are effects of central government expenditures to be distinguished. Ideally, incidence studies should incorporate both effects simultaneously.

Hence, even when restricted to the fiscal flows of central government, each expenditure and each revenue programme still has separate types of welfare effects. The mix of the welfare effects depends upon the type of fiscal flow at hand and the concept of welfare that is used.

In this study it is assumed (chapter 2) that total regional welfare is a function of all private and all publicly provided goods and services consumed by the population of the region concerned. Under a certain number of assumptions, regional welfare may be measured by a social welfare function with two components.

First, the total regional *disposable income* of households. Disposable income is

equal to the total of all primary incomes of households plus all secondary income transfers received. Such secondary income transfers are not tied to the consumption of goods or services. They only have an effect on the level of disposable income and they do not influence the pattern of consumption. Examples of secondary transfers are income taxes, social security contributions and social security benefits.

Second, total *net benefit of the consumption of publicly provided goods and services* by regional households. The transfers received or paid by the central government are tied to the consumption of goods and services. These transfers do affect total disposable income as well as consumption patterns. Examples of such transfers are the value added taxes, rent allowances and the subsidy embodied in publicly provided goods and services.

From a consumers' point of view, one may **not** add these two terms, because of the principal difference in public benefits which are part of disposable income versus imputed benefits of publicly provided goods and services.

This social welfare approach has the advantage that one may regionalize fiscal flows according to three clearly distinguished effects of such flows on regional welfare. The three effects are:

1. *Primary income effects.* Central government influences the size and the composition of total primary income per region through: (1) paying salaries to its employees, (2) buying investments and consumption goods and services from the private sector, (3) taxing profits of enterprises.
2. *Secondary income effects.* Central government redistributes primary income through direct taxes and social contributions on the one hand and untied income transfers on the other hand. When secondary transfers are added to primary income, total disposable income of the household sector is obtained.
3. *Tertiary income effects.* Central government, finally, influences regional welfare through the subsidized part of publicly provided goods and services, indirect taxes and tied income transfers (= non cash benefits).

The method to regionalise fiscal flows can be described by answering the five following questions (chapter 2)

1. First, which fiscal flows are to be considered? The method is restricted to actual fiscal flows. This means that the welfare effects of tax subsidies and non-financial regulations such as environmental policy are excluded.
2. Second, which fiscal flows affect which kind of income? All actual fiscal flows affect one or two of the income components: primary income, secondary income or tertiary income. One category has effects on primary income as well as on tertiary income. These fiscal flows consist of inputs for publicly provided goods and services and are called "transformation expenditures". Salaries and investments are transformed in publicly provided goods and service. Inputs affect primary income, output affects tertiary income.

3. Third, which income components are partial. Only the net benefit of publicly provided goods and services is estimated. In principle is to be based on the social welfare approach does not involve shifting and benefit size of national flows is equal to the size of operational, and measurement of and substitution.
4. Which types of income components are different types of income components from the different data, which have 87 revenues per regional data of distribution of primary income.
5. How are these income components estimated. With the multiplier effect captured. Such as Groningen, Friesland, and Friesland.
- * Secondary flows: obtain total disposable income distribution of primary income.
- * Tertiary flows: empirical studies. This holds true for the process accounting (1981).

Table 1 shows main average primary income components are ranked on the basis of in The Netherlands provinces (Utrecht, Drenthe, Overijssel, and Friesland). The *net-primary*

3. Third, which incidence principle is used? The above mentioned incidence studies are partial. Only in regional computable general equilibrium models, tax shifting, benefit snatching, and income and substitution effects can be adequately estimated. In partial studies, like this one, the essential question is which incidence principle is to be used. This study employs the "effective incidence" principle. This approach does not consider income- and substitution effects of fiscal flows, but tax shifting and benefit snatching are embedded in the allocation rules. Effects on the size of national income are not considered. The total amount of the allocated fiscal flows is equal to the total amount of the central government budget. To remain operational, any approach almost necessarily has to restrict itself to the measurement of first order effects on regional welfare and has to disregard income and substitution effects (tax shifting and benefit snatching excluded).
4. Which types of fiscal flows are to be allocated to regions? Which region pays the different types of revenues of the central government and which region benefits from the different types of expenditures? Answering these questions requires much data, which have to be collected and - partly - adjusted. In all 414 expenditures and 87 revenues programmes have been regionalized. For The Netherlands much regional data can be derived from the national income accounts and statistics on distribution of personal income (CBS, S2; CBS, S17; CBS, S20).
5. How are these money flows to be translated into income effects?
 - * The impact of primary money flows on the primary income of households has to be estimated. With an interregional input-output model, in principle, the variety in multiplier effects of different categories of expenditures and revenues can be captured. Such models have been applied for the three Northern provinces of Groningen, Friesland en Drenthe.
 - * Secondary flows of transfers are subtracted from and added to primary income, to obtain total disposable income of households. The inequality of the interregional distribution of primary and disposable income can then be compared.
 - * Tertiary flows: The intention is to translate the flows in terms of utility. In most empirical studies it is assumed that the costs of publicly goods are equal to utility. This holds true if one assumes that the outcome of the public decision making process accurately reflects all individual preferences simultaneously (Haselbekke, 1981).

Table 1 shows main results of the applied method (chapter 4). The first column shows average primary income per capita over the period 1979-1986. Provinces (eleven in all) are ranked on the base of the primary income. Interprovincial primary income differences in The Netherlands are small, ranging between 24%-points. Inhabitants of the core provinces (Utrecht, Noord-Holland en Zuid-Holland) have a higher average primary income per capita than inhabitants of peripheral provinces like Groningen, Friesland, Drenthe, Overijssel and Limburg.

The *net-primary money flows* per capita are not evenly distributed over provinces

Table 1 Primary, secondary and tertiary income per capita, 1979-1986 averages

	Primary income	Net- pri- mary money flows	Primary income induced by central government 1980 ¹	Net- Secondary transfers	Disposable income	Net- tertiary transfers	Tertiary income
	index	index	index	Gld	index	Gld	index
Friesland	86	85	72	-510	95	520	101
Groningen	86	100	104 ²	-80	99	330	102
Overijssel	87	86		-750	94	-130	92
Drenthe	89	96	86 ²	-670	97	-70	97
Limburg	89	86		-460	99	-60	99
Gelderland	95	97	²	-1430	97	170	100
Noord-Brabant	99	86	²	-1710	99	130	100
Zeeland	100	120	²	-1950	98	-130	98
Noord-Holland	108	111	²	-2190	105	30	104
Utrecht	109	121	²	-2640	102	30	102
Zuid-Holland	110	108	²	-2660	103	-240	100
	12550	6980	6150	-1730	10820	10	11120
Netherlands (Gld)							

¹ Estimated with an bi-regional I-O-model with consumption function;

² The estimated primary income per capita of the remaining provinces is Gld 6270 (102).

(Table 1, column 2). These net-flows are equal to the difference between primary flows received (salaries, interests) and primary flows paid (interests, corporate income tax). Provinces with high average primary incomes receive relatively more.

These primary money flows have to be translated to *primary income-effects*. In small open economies many transfers will spill-over into other regions. These spill-over effects are estimated for the three Northern provinces (Groningen, Friesland and Drenthe) by means of three bi-regional Input-Output-models. Column 3 of Table 1 shows the results of the I-O-calculations. The induced primary income-effects are relatively small in Drenthe en Friesland and somewhat larger in Groningen. Although primary income-effects cannot be estimated for all Dutch provinces, the conclusion is that primary activities of central government do increase interprovincial primary income differences somewhat. The unequal distribution of the primary money flows explains most of this result.

Column 4 of Table 1 shows the results of central government *secondary activities*. Because secondary transfers finance a large part of central government's primary

activities, the national transfers than peripheral secondary transfers. In terms of the 'poor' Benefits, particularly have the strongest income differences interprovincial income

Columns 6 and 7 show government. The national 'tertiary' taxes paid received (rent allowance) is assumed that the concerned are equal to consumers in private varies somewhat. incomes per capita incomes are benefited reduce the interprovincial cause are the sole however, enlarge the

Although there are three extreme revenues did extreme provinces with extreme (Zeeland) increased shrunk over the province from flood increased over the low primary income

The main cause of interprovincial primary tertiary activities, the central government inequality. When welfare variation is defined in terms provincial income in savings and consumption. Third, some interprovincial regional classification

activities, the national net-result is negative. Core provinces lose much more secondary transfers than peripheral provinces. Column 5 - as compared to column 1 - shows that secondary transfers reduce the interprovincial primary income differences considerably. In terms of the 'power ratio' the average reduction over the period 1979-1986 is 61%. Benefits, particularly disablement benefits (AAW&WAO) and retirement benefits (AOW) have the strongest equalizing effect (57%). The 'secondary' taxes reduce interprovincial income differences by 11%, whereas 'secondary' social security contributions increase interprovincial income differences by 7%.

Columns 6 and 7 of Table 1 show the results of the *tertiary activities* of central government. The national net-effect equals zero. This net-effect is the difference between 'tertiary' taxes paid (value added taxes, central governments' gas revenues) and benefits received (rent allowances, consumption of publicly provided goods and services, etc.). It is assumed that the net-production costs (cost -/- retributions) of the goods and services concerned are equal to consumers' utility (cost of service method). Costs are attributed to consumers in proportion to the amount consumed. Between provinces the net-effect varies somewhat. The core provinces, Utrecht and Noord-Holland - with high primary incomes per capita - contribute. Most peripheral provinces with relatively low primary incomes are benefited. In terms of the power ratio tertiary activities of central government reduce the interprovincial secondary income differences by another 19%. Tertiary benefits cause are the sole cause (31%). 'Tertiary' taxes (VAT, gas revenues paid by households), however, enlarge the interprovincial income differences with 12%.

Although the above conclusions are rather stable over the period of investigation, there are three exceptions. First, over the period 1979-1985 central governments' gas revenues did extremely rise because of increased energy prices. The contributions of provinces with energy-intensive industrial structures (Groningen, Zuid-Holland en Zeeland) increased accordingly. Second, primary benefits of the province of Zeeland shrunk over the period, because the 'Deltawerken' (a large project to protect this province from flooding) were completed. Third, the strong secondary equalizing effect increased over the period because of a rise in unemployment benefits in provinces with low primary incomes per capita.

The main conclusions are that central government primary activities increase interprovincial primary income differences. Secondary activities and to a lesser degree tertiary activities, however, have a strong equalizing effect. The overall result of Dutch central government money flows is a strong reduction of interprovincial income inequality. When welfare is measured using tertiary income, the remaining interprovincial welfare variation is very small. Some cautionary notes have to be made. First, welfare is defined in terms of income. Other definitions may lead to other conclusions. Second, provincial incomes differ from provincial spending levels because of regional differences in savings and costs of living. In The Netherlands these differences are, however, small. Third, some interregional differences might be overlooked because of the chosen regional classification: by provinces.

The second part of this thesis shows the regional distributive impacts of some major individual public programs by means of a traditional fiscal flow analysis. In these analyses all fiscal flows are added, irrespective of their welfare effects. Although this assumption is not always realistic, and our method is preferable from a scientific point of view, regional policymakers prefer these partial studies. They are more interested in the size of the received budgets and are less interested in the economic effects of financial flows. In this study the impact of the following public programs on regional income distribution has been investigated: regional policy, potential regional policy (chapter 5), passenger transport policy (chapter 6), tax policy (chapter 7) and social security policy (chapter 8). All fiscal flows are imputed to provinces according to the primary and secondary income approach. Table 2 shows results of this analysis. The provinces are ranked on the base of primary income per capita (Table 1, column 1).

Table 2 Net-redistribution per province in million guilders, 1979-1986 averages

	Total central government policy ¹	Regional policy ¹	Potential regional policy ¹	Passenger transport policy ²	Social security policy
Friesland	510	90	60	-10	620
Groningen	1130	150	130	-30	640
Overijssel	530	40	100	-60	460
Drenthe	470	120	30	-50	630
Limburg	730	270	150	-120	1220
Gelderland + ZIJP	1080	-60	-30	-110	380
Noord-Brabant	-1330	-60	150	-300	30
Zeeland	490	30	120	-10	-300
Noord-Holland	250	-220	-200	440	-120
Utrecht	540	-50	-160	120	-260
Zuid-Holland	-1300	-210	90	160	-2390
Netherlands	3090	110	430	40	920
Extra territorial sector	-3090	-110	-430	0	-1720
Total	0	0	0	40	-810
Total expenses	205600	2020	8160	7070	104350
Interprovincial redistribution	2600	600	380	690	3070
As % of outlays	1.3%	29.5%	4.7%	9.8%	2.9%

¹ Total national revenues are raised equal to total expenses;

² Averages over the period 1980-1986.

The first column of Table 2 shows the net-redistribution through *all public programs*

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in million guilders (see also paragraph 4.9). The interprovincial redistribution amounts to Gld 2.6 billion, or equals 1.3% of total outlays. The equalizing effect on interprovincial income differences is not unambiguous. Not all provinces with high respectively low primary income are net-contributors, or net-receivers respectively. The largest net-contributor are foreign consumers of Dutch natural gas. Their contributions are allocated to the extra territorial sector (ETS, Gld 3.1 billion). Furthermore, the contribution of Noord-Brabant and to a lesser degree that of Zuid-Holland is relatively large. The largest net-receivers are Groningen, Gelderland and Limburg. Noord-Holland and Utrecht with high primary incomes per capita are net-receivers also.

The interprovincial redistribution through *regional policy* programmes (Gld 0.6 billion) is smaller than the redistributive impact of total policy, but it is far more effective (30% versus 1.3%). Provinces with low primary income per capita are net-receivers. Provinces with high primary incomes and the ETS are net-contributors. With a least square analysis the spatial distribution of regional funds is evaluated, starting from regional policy principles that regions with high unemployment and low incomes receive more funds. The results of this analysis show that policymakers also seem to have other motives to distribute the funds and that they react weakly on changes in regional unemployment or income levels.

The third column of Table 2 shows the geographical distribution of fiscal flows of the so-called *potential regional policy* (chapter 5). The characteristics of these programmes are comparable to the characteristics of regional policy instruments, but they are not limited to specific regions. The spatial distribution of flows under both policy instruments is almost similar, although there are some differences. The first difference is that the total interprovincial redistribution is somewhat smaller (Gld 0.4 billion or 4% of the outlays). Second, two provinces with high primary incomes per capita (Zeeland en Zuid-Holland) are net-receivers.

The fourth column of Table 2 shows the redistributive effects of *passenger transport policies* (chapter 6). Passenger transport policy redistributes funds (Gld 0.7 billion) from peripheral provinces with low primary incomes to core provinces with high incomes. Through excises on gasoline and road taxes, inhabitants of peripheral provinces bear a large share of the costs of public transport and infrastructure in the core provinces, although their car mobility is lower than that of inhabitants of core provinces. Given this result a road tax system is recommended, which takes into account these provincial differences.

The fifth column of Table 2 covers interprovincial redistribution through *social security policy* (chapter 8). From provinces with high income to provinces with low incomes is shifted Gld 4 billion. The size of this redistribution is the largest of all policy areas investigated and is six times that of regional policy itself. Benefits, especially disablement benefits and transfers to elderly, cause most of this redistribution. Social security contributions, however, enlarge interprovincial income differences.

Central governments' tax policy is also instrumental in total redistribution (chapter 7). Provinces with high primary incomes contribute relatively more than provinces with

low primary incomes. By means of a regression analysis it is shown that variation in tax liabilities (primary income of households and corporate profits) explains differences in tax revenues. The example of a hypothetical provincial tax system illustrates the fact that such a system enlarges provincial tax differences. Differences in tax bases and provincial spending patterns explain this result.

These partial analyses serve to illustrate that some public programs enlarge interprovincial income differences, while other reduce these differences.

Based on the results obtained, the following policy recommendations can be formulated.

First, if policymakers do not accept large spatial differences in welfare, they have to pay more attention to the spatial impacts of various programmes that are not primarily or explicitly intended to charge the distribution of incomes (welfare). For example, a reduction of the level of disablement benefits will reduce spending capacity of consumers relatively more in peripheral provinces (Oost-Groningen, Zuidoost-Drenthe en Zuid-Limburg) than in the core provinces, because the first group of provinces has relatively more recipients.

Second, given the small welfare differences found between provinces, continuation of regional policy is hard to justify. However, one has to realize that the welfare concept used is based on income. It does not include the aspect of how incomes (wages versus benefits) are obtained. Wages have the same weight as a benefits of equal amount. Commonly, however, jobs are preferred over unemployment. When this fact is accepted, regional policy within The Netherlands may still be justified, because (hidden) unemployment differs largely between provinces.

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